

## Smoking cessation support in Iran: Availability, sources & predictors

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**Background & objectives:** Smoking cessation advice is known as an important factor in motivating smokers to quit smoking. We investigated the extent, sources and predictors of receiving unsolicited advice and seeking active advice for smoking cessation in Iran.

**Methods:** A cross-sectional study was performed as a part of Isfahan Healthy Heart Program (IHHP) on 9093 adult individuals (both men and women) in 2004-2005. Demographic characteristics, smoking status, sources and preferences for smoking cessation support were recorded.

**Results:** In the studied population, 66.8 and 14.4 per cent had received and asked for cessation support, respectively. Smokers had received advice from family (92.2%), friends (48.9%), physician (27.9%) and other health care providers (16.2%). Smokers had asked for cessation help more frequently from family (64.5%) and friends (42.0%). Women (OR: 0.59, 95%CI: 0.37-0.94) and singles (OR: 0.51, 95%CI: 0.36-0.71) received less advice. Hookah smokers received (OR: 0.23; 95%CI: 0.14-0.38) and asked (OR: 0.21; 95%CI: 0.06-0.68) for cessation help less than cigarette smokers. Receiving advice increased the odds of seeking support (OR: 7.98; 95%CI: 4.37-14.57).

**Interpretation & conclusions:** Smokers' family and friends were more frequent sources for smoking cessation support. Tobacco control programmes can count on smokers' family and friends as available sources for smoking cessation support in countries where smoking cessation counselling services are less available. However, the role of physicians and health care workers in the smoking cessation counselling needs to be strengthened.

**Key words** Cigarettes - hookah - Iran - smoking - smoking cessation

Smoking is one of the major causes of death worldwide and the most preventable risk factor of coronary heart disease<sup>1</sup>. Prevalence of smoking has come to a plateau or has been decreasing in most developed countries, whereas it has been increasing in many developing countries since 1990s<sup>2</sup>. Once initiated, smoking is a very difficult addiction to

overcome, so that in most smoking cessation programmes about 10-25 per cent of smokers maintain abstinence up to 1 year after smoking cessation<sup>3</sup>, while spontaneous cessation rates are only about 3-5 per cent<sup>4</sup>.

Many studies have emphasized the role of supporting environment as a motivating factor for smoking cessation<sup>5-8</sup>. It is well documented that

providing advice and helping smokers to start and maintain smoking cessation is an important part of every smoking cessation programme<sup>5</sup>. Additionally, smokers are encouraged to ask for smoking cessation help from others<sup>6</sup>. Smoking cessation support has been shown to increase cessation rates 1.3 to 1.5 fold<sup>7</sup>. In a study done by Carlson *et al*<sup>8</sup> during 1999-2000 in Canada, separate support group sessions were held for persons supporting prospective quitters. Six hundred smokers brought 156 support people with them to the group sessions. Those smokers who had support people attending at least one of the support group sessions had higher cessation rates at 3, 6, and 12 months compared to those without a support person<sup>8</sup>.

In Iran, the prevalence of smoking is 27.2 per cent among men and 3.4 per cent among women<sup>9</sup>. This problem accompanied with limited smoking cessation services, implicates the necessity of a better knowledge about existing sources and factors involved in smoking cessation support at population level. The present study investigated smoking cessation support, its actual sources versus smokers' choices in asking for cessation help, and its predictors in a representative sample of Iranian population in the context of Isfahan Healthy Heart Program (IHHP) which is the first comprehensive community-based programme in Iran that has performed a multilevel tobacco control intervention as one of its major strategies<sup>10,11</sup>.

### Material & Methods

This cross-sectional study was performed in the context of Isfahan Healthy Heart Program (IHHP). Design and details of IHHP have been described previously<sup>10,11</sup>. In brief, IHHP aimed to control non-communicable disease (NCD) through improvement of lifestyle. It was performed in the central part of Iran, in two counties (Isfahan and Najafabad) as intervention areas and one county (Arak) as reference area, from 2000 to 2007. The study population was stratified by their living area (urban vs rural), age and sex by multistage random sampling method. Adults 19 yr and older were included in the study. Those who were pregnant, mentally retarded or physically disabled were excluded. Written informed consent was obtained from participants.

For this cross-sectional household survey, the field work was carried from January 2004 to December 2005 on a total number of 9093 individuals<sup>11</sup>. The study received the approval of the ethical committee of Isfahan Cardiovascular Research Center, Isfahan.

At home interviews were made by trained health professionals. Data were collected by a validated questionnaire including demographic characteristics (such as age, gender, marital status, education level, income and job status), smoking status, duration and frequency of smoking and several smoking-related variables such as knowledge and attitude toward smoking. Income level was classified to low and high groups, using 50 percentile as cut-off point. Smoking status was categorized as smoker and non-smoker. Type of tobacco product (cigarette vs hookah *i.e.*, waterpiper or norghile) was also enquired. Those who were smoking at least one cigarette per day or smoked hookah once a week at the time of study were considered smokers and otherwise as nonsmoker<sup>12,13</sup>. In the studied population, 1181 subjects were current smokers according to the defined criteria. The smokers were asked about receiving advice for smoking cessation by the question "Have you received any advice for smoking cessation during the previous year?" Those who had received advice for smoking cessation were further asked about the source(s) of advice. Respondents selected the source of the advice from a list, whether it was a physician, other health care provider, family and/or friends. Seeking help for smoking cessation among smokers was also inquired by the question "Have you asked for smoking cessation help during the previous year?" Smoker's interest in seeking help from family, friends, physicians and/or health care providers was recorded. Smokers who had a smoking cessation attempt during previous year, were characterized by the question "Have you attempted to stop smoking during previous year?", those who answered 'yes', were further asked "What was the reason that motivated you to try smoking cessation?" The smokers chose from a list including "a health problem, to be healthy, for the sake of others' health, to save money on cigarettes, to be a good pattern for my children, and others pressure and advice".

Socio-demographic characteristics including age, sex, marital status, educational level, occupation, income and living area were calculated separately for smokers, smokers who had received advice, and smokers who had asked for cessation support. To evaluate the effect of demographic characteristics on receiving and seeking smoking cessation support, odds ratios (95% CIs) were employed from multiple logistic regression models to evaluate the effect of demographic characteristics as independent variables on receiving support as dependent variable.

Separate models were used to evaluate the effect of demographic characteristics as independent variables on seeking support as dependent variable. The multivariate analysis was performed using a logistic regression model in order to remove the potential effect of possible socio-economic confounders on the receiving advice and seeking support. The association between type of tobacco product, frequency of use, presence of other smokers at home, reasons for smoking cessation support on receiving advice and seeking support was investigated using univariate logistic regression analysis, adjusting for age as well as other socio-demographic variables. Data were analyzed by SPSS software package version 13 (SPSS, Inc. Chicago, IL).

### Results

A total of 9093 (49% men, 51% women) adult individuals (19-83 yr old) were studied. Among these, 1091 men (92.4%) and 90 women (7.6%) were smokers. On the whole, 987 (83.6%) smokers were married and 194 (79.7%) were urban. A total of 66.8 per cent of the smokers had received smoking cessation advice during the previous year; 14.4 per cent of the smokers had asked for smoking cessation help during the previous year. Among 789 (66.8%) smokers who had received advice for smoking cessation, 726 (92.2%) had received advice from their family, 385 (48.9%) from friends, 220 (27.9%) from physician, and 128 (16.2%) from other health care providers (Table I).

Of the 170 smokers who had asked for smoking cessation help, 110 (64.5%) reported family, 71 (42.0%) friends, 44 (25.9%) physician, and 30 (17.6%) health care providers as their source. The main reasons for smoking cessation attempts among smokers who had received cessation advice were other's advice (57.2%) and better health (15.6%) (Table I).

Women (OR: 0.59, 95% CI: 0.37-0.94) and singles (OR: 0.51, 95% CI: 0.36-0.71) received less smoking cessation advice. Living with a smoker (OR: 0.64; 95% CI: 0.47-0.87) and heavier smoking pattern (OR: 0.97; 95% CI: 0.96-0.99) decreased the odds of receiving smoking cessation support. Predictors of seeking support for smoking cessation help were manual class (in reference to non-manual class) occupation (OR: 1.54, 95% CI: 1.02-2.31) and older age (OR: 0.98, 95% CI: 0.97-0.99). Living with a smoker also decreased the odds of seeking smoking cessation support (OR: 0.46; 95% CI: 0.32-0.67) (Table II).

**Table I.** Demographic characteristics of the smokers' population in 2004-2005

	Current smokers (n=1181)	Received advice (n=789)	Seeking support (n=170)
<i>Age (yr) (Mean ± SD):</i>	44.7±15.7	44.5±14.9	41.5±14.4
<i>Gender (%):</i>			
Male	92.4	94.0	95.9
female	7.6	6.0	4.1
<i>Marital status (%):</i>			
Married	83.6	87.6	87.6
Single	16.4	12.4	12.4
<i>Educational level (yr):</i>			
0-5	48.5	48.7	48.8
6-12	41.8	41.1	44.7
>12	9.7	10.2	6.5
<i>Job (%):</i>			
Housewife	4.8	3.3	2.4
Retired	27.1	24.1	20.6
Manual	41.5	46.5	53.3
Non-manual	26.6	26.1	23.6
<i>Income (%):</i>			
Low	24.7	23.6	27.6
High	75.3	76.4	72.4
<i>Living area (%):</i>			
Urban	79.7	77.2	72.9
Rural	20.3	22.8	27.1
<i>Source of advice (%):</i>			
Physician	Not applicable	27.9	25.9
Health professionals		16.2	17.6
Family		92.2	64.5
Friends		48.9	42.0
<i>Reason for smoking cessation attempt:</i>			
Health problem	3.8	5.8	29.9
To be healthy	10.3	15.6	81.0
Other's health	8.7	12.9	68.7
Saving money	2.5	3.7	19.7
As a good pattern	8.8	13.2	69.4
Other's advice	55.8	57.2	55.8
<i>Pattern of use(Mean ± SD):</i>			
Cigarettes/day	12.0±9.8	12.5±9.9	11.9± 9.9
Hookah/week	5.7±14.2	4.3±8.6	7.5±11.7
<i>Smoking cessation attempt (%)</i>	42.3	51.3	71.6

Hookah smokers received (OR: 0.23; 95% CI: 0.14-0.38) and asked (OR: 0.21; 95% CI: 0.06-0.68 for seeking) for cessation help less than cigarette smokers. The most powerful motivation for smoking cessation attempt among those who had received cessation advice were health-related (health problem: OR: 11.20; 95% CI: 2.69-46.55, better health: OR: 11.09; 95% CI: 4.83-25.47). Receiving advice increased the odds of seeking support (OR: 7.98; 95% CI: 4.37-14.57) (Table III).

**Table II.** Demographic predictors of smoking cessation support in the smokers' population in 2004-2005 (adjusted for age, sex, marital status, education, occupation, income and living area)

	Received advice OR (95% CI)	Seeking support OR (95% CI)
<i>Age (yr)</i>	1.00 (0.99-1.00)	0.98 (0.97-0.99)
<i>Gender:</i>		
Male	1	1
Female	0.59(0.37-0.94)	0.48 (0.21-1.05)
<i>Marital status:</i>		
Married	1	1
Single	0.51(0.36-0.71)	0.68 (0.42-1.11)
<i>Educational level (yr):</i>		
>12	1	1
≤12	1.00 (0.66-1.51)	1.64 (0.86-3.12)
<i>Job:</i>		
Non-manual	1	1
Manual	1.37(1.00-1.89)	1.54(1.02-2.31)
Housewife	0.53(0.28-1.00)	0.53(0.18-1.55)
Retired	0.75(0.53-1.05)	0.83(0.51-1.36)
<i>Income:</i>		
High income	1	1
Low income	1.04 (0.77-1.40)	1.20 (0.83-1.75)
<i>Living area:</i>		
Rural	1	1
Urban	1.05 (0.74-1.47)	1.22 (0.82-1.83)

## Discussion

We investigated sources and predictors of smoking cessation support, both received and asked advice. The study had two limitations, first: it was based on smokers' report, which might have been prone to recall bias; second: it was not examined whether received and asked advice has had any impact on the motivation of the smoker for cessation or affected smoking cessation rate. More than half of smokers had received smoking cessation advice during the previous year. Relatively low proportion of smokers reported seeking support for smoking cessation. Sources of 'receiving smoking cessation advice' in decreasing order were family members, friends, physicians and other health care providers. Sources of 'ask for cessation help' were mainly family and friends. Receiving advice was evidently associated with more seeking support. Received advice was lower among women and single smokers. Smokers with heavier pattern of smoking received less advice. Moreover, hookah smokers received and asked for cessation help less than cigarette smokers.

Providing smoking cessation advice to smokers is a major component of all efforts to control and limit smoking<sup>4</sup>. In our study, smokers received advice mainly from family and friends so that 66.8 per cent of

**Table III.** Predictors of receiving advice, seeking support and smoking cessation attempts in the smokers' population in 2004-2005 (adjusted for age, sex, marital status, education, occupation, income and living area)

		Received advice OR (95% CI)	Seeking support OR (95% CI)
Tobacco type	Hookah	0.23 (0.14-0.38)	0.21(0.06-0.68)
	Cigarette	1	1
Frequency of use		0.97 (0.96-0.99)	1.99 (0.93-1.00)
Other smokers at home	Yes	0.64 (0.47-0.87)	0.46 (0.32-0.67)
	No	1	1
Reasons for smoking cessation attempt			
Health problem	Yes	11.20 (2.69-46.55)	
	No	1	
To be healthy	Yes	11.09 (4.83-25.47)	
	No	1	
For others' health	Yes	7.64 (3.511-16.66)	Not available
	No	1	
To save money	Yes	7.04 (1.66-29.80)	
	No	1	
To be a good pattern	Yes	9.16 (3.97-21.12)	
	No	1	
Others' advice	Yes	2.23 (0.51-9.71)	
	No	1	
Received advice	Yes		7.98 (4.37-14.57)
	No	Not applicable	1

smokers had received advice. In a similar study on 429 adult smokers and recent quitters, patient self-report of receiving advice about smoking in the previous year was about 66 per cent<sup>14</sup>. These similar findings are in the setting of the demographic differences between our sample and the Minnesota study that included both smokers and recent quitters with half of them being women, married and with more than high school education. Other studies have reported advice ranging from 37 to 46 per cent, a range that does not meet present standards of patient care which is 75 per cent<sup>15,16</sup>.

In our study, 14.4 per cent of smokers had asked for smoking cessation help. This is consistent with previous studies indicating that about 95 per cent of smokers in the population do not seek treatment for smoking cessation<sup>17</sup>. Compared with this report, our study showed higher rates of seeking support, regardless of their motivation for smoking cessation.

Support persons are usually partners, friends or other family members<sup>6,18</sup>. In our study the smokers were more attracted towards family and friends as sources of smoking cessation help, probably as they received more advice from them rather than health professionals. This may be due to unawareness of Iranian smokers about available smoking cessation services. It may also be explained by less accessibility of cessation services that makes smokers ask their family/friends as the main sources for cessation support. This highlights the need for effective smoking cessation services in Iran, while it offers an opportunity for tobacco control programmes to take advantage of smokers' families and friends to encourage smokers to stop smoking. While clinic-based treatments produce the highest smoking cessation rates and the lowest population coverage<sup>19</sup>, interventions provided by family and friends can reach the majority of smokers who do not seek treatment for smoking cessation<sup>20</sup>.

In our study, gender and marital status were the only demographic predictors affecting 'received smoking cessation advice'. Being married may enhance smoker's motivation for smoking cessation through reliance on a close supporting one or through exposing the smoker to more frequent advice for smoking cessation<sup>21,22</sup>. Moreover, community surveys have found that success in stopping smoking is associated with not being exposed to smokers<sup>23,24</sup>.

In a population-based study on 3037 adult cigarette smokers, higher education level and greater number

of cigarettes smoked per day were related to a higher rate of counselling<sup>16</sup>. In our study education did not show significant effect on smoking cessation. Also, heavier use was inversely associated with seeking help. Contrary to the findings of this study<sup>16</sup>, in our study smokers asked for help less frequently with advancing age, which might be due to a feeling of disappointment for a successful smoking cessation attempt as older smokers are usually chronic, heavy smokers who are highly addicted<sup>25</sup>.

Hookah smokers receive and asked for cessation help less than cigarette smokers. Hookah is usually known as a social hobby in Iran, served in gatherings and more common among women and younger ages<sup>26</sup>. There is also less awareness about its many hazards such as lung cancer, respiratory illness, low birth-weight and periodontal disease<sup>27</sup>. This might explain the less cessation advice by hookah smokers<sup>28</sup>.

Unlike developed countries, in many developing countries, smoking cessation counselling services are less frequently available or actively offered by health professionals. This problem needs consideration in developing countries like Iran, that is at the beginning of provision of tobacco control measures at national level. Our results also show a potentially available source for implementing smoking cessation interventions by relying on the smokers' interests and the most of smoking cessation support, *i.e.*, smokers' families and friends. Family and friends can be considered as available sources for smoking cessation support in countries in which smoking cessation counselling services are less available. However, the role of physicians in the smoking cessation counselling should be promoted by providing smoking cessation counselling services at the community level.

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